

Annual Report of the Chief Engineer State Highway Department 1932

Dover, Delaware
December 31, 1932

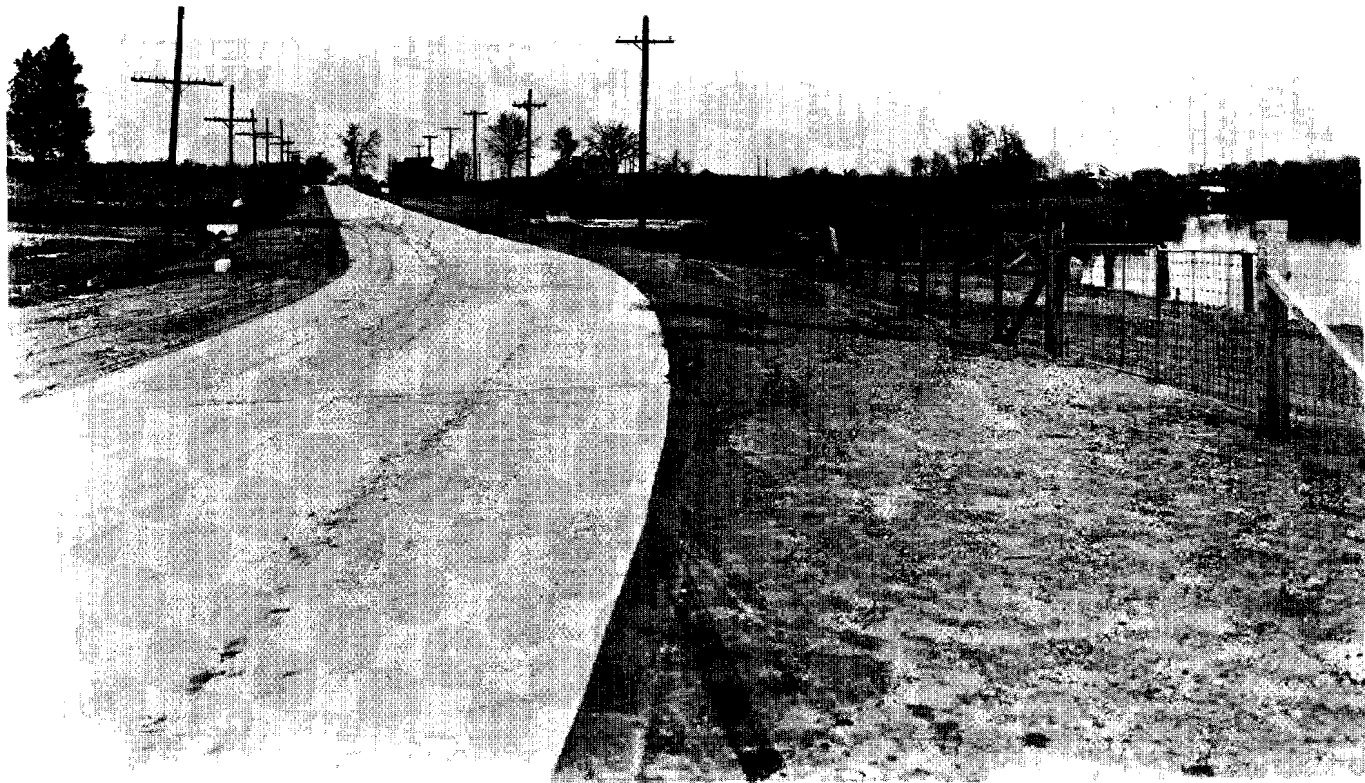
To the Chairman
and Members of the
State Highway Department,
Dover, Delaware.

Sirs:

Pursuant to the statute, I herein submit a report of the work of the State Highway Department during the calendar year 1932, with a list of roads for which petitions have been received asking that they be made a part of the State Highway System. There are also included certain recommendations for work to be done during the coming year.

The work of the Department during the past year has been unusual in many respects, due, in a large measure, to the prevailing financial and unemployment conditions about which reference will be made later in the report. These conditions have been instrumental, however, in reducing contract prices to the lowest point in the history of the Department and have enabled the construction of a greater mileage of highways than would otherwise have been possible.

Favorable weather conditions have made construction work practical throughout the entire year, without the usual winter layoff; this condition has resulted in much additional work and activity in every Division.



East Front Street, Milford, Kent County. 20-foot Concrete Roadway.

There follows a resume of the activities of the various Divisions of the Department:

SURVEYS Five field parties have been kept busy throughout the year, making surveys necessary for the preparation of accurate plans, the staking out of new work and the final measurements of completed contracts.

A summary of this work is shown in the following tabulation:

Base Line	103.1 Miles
Topography	92.9 "
Cross Sections, preliminary and final	119.0 "
Borrow Pits Cross Sectioned, preliminary and final	70

Property surveys were also made for rights of way and maintenance.

In the Drafting Room plans were prepared as follows:

Line and Topography	108.8 Miles
Cross Sections plotted (original and final) ..	122.0 "
End Areas planimetered and computed (original and final)	124.6 "
Profile and Grade laid	85.4 "
Index Maps plotted and traced	110.5 "
Plotted and Computed	70 Borrow Pits

Government requirements in connection with the Federal Emergency Appropriation of \$600,000 increased materially the work of this Division during the year.

During 1932 the Department held twelve road lettings comprising fifty-nine contracts. A total of 356 bids amounting to \$1,587,407.61 were received and each bid was checked, item for item, and tabulated according to their respective standing.

A tabulation of the contracts awarded during 1932 is attached.

TABULATION OF CONTRACTS AWARDED IN 1932

Cont. No.	Location	Estimated Cost	Date of Award	Contractor	Length in Miles	Type of Roadway
218	Hare's Corner-Farnhurst.....	\$53,010.00	1-6-32	Vincent Schiavi, Buffalo, N. Y.....	2.20	Grading
224	Washington Blvd. Ext., Wilmington....	48,905.00	1-11-32	Vincent Schiavi, Buffalo, N. Y.....	1.48	Grading
234	Cheswold-Bishop's Corner.....	2,346.00	1-6-32	Gooden & Clark, Dover, Del.....	2280 Ft.	Sidewalk
229	Gum X Roads-Middleford.....	59,595.00	2-5-32	Continental Contracting Co., Baltimore, Md....	3.74	9' Concrete
232	Stockley-Zoar Camp.....	21,949.00	1-21-32	Old Line Construction Co., Chestertown, Md....	2.72	20' Gravel
235	Dover-State College.....	4,576.00	1-27-32	C. C. Brown, East Falls, Va.....	5255 Ft.	Sidewalk
236	Naaman's Rd.-Hickman Rd.....	1,779.50	1-23-32	E. DiSabatino, Wilmington, Del.....	1250 Ft.	Sidewalk
237	Augustine Bridge-Concord Pike.....	16,710.00	1-28-32	A. Petrillo & Co., Wilmington, Del.....	1.01	Grading
238	Middletown-St. Anne's Church.....	4,775.50	1-27-32	Spear-Jones & Co., Scranton, Pa.....	2700 Ft.	Sidewalk
239	Kennett Pike-Greenville.....	7,722.50	2-5-32	Joseph Thomas, New Castle.....	6275 Ft.	Sidewalk
225	Willow Grove-Woodside.....	49,239.00	2-13-32	Irving V. A. Huie, Inc., Saugerties, N. Y.....	3.52	9' Concrete
227	E. Lookerman St. Ext., Dover.....	17,256.00	2-15-32	Joseph Ciccone, Philadelphia, Pa.....	0.52	Grading
241	7th Street, New Castle.....	35,690.00	2-23-32	D. E. O'Connell & Sons, Wilmington, Del.....	2000 Ft.	20' Concrete
242	Jimtown Crossing-Clayton.....	14,321.00	2-13-32	E. Riley Mixner, Ocean City, N. J.....	.47	16' Concrete
243	Rehoboth Sidewalk.....	2,046.75	2-13-32	Hickman & Short, Bethany Beach.....	2625 Ft.	Sidewalk
244	Sandy Forks-Bryan's Store.....	4,445.00	2-27-32	Highway Eng. & Constr. Co., Selbyville, Del.....	6.7	Clearing & Grubbing
245	Philadelphia Pike-Marsh Road.....	3,439.00	2-13-32	A. Petrillo & Co., Wilmington, Del.....	2910 Ft.	Sidewalk
246	Christiana Sidewalk.....	1,530.00	2-13-32	A. Mitchell & Sons, New Castle, Del.....	1700 Ft.	Sidewalk
247	Centreville Sidewalk.....	2,520.00	2-13-32	A. Ventresca & Sons, Wilmington, Del.....	2000 Ft.	Sidewalk
"X"	Slaughter Beach Groin.....	1,020.00	2-29-32	Geo. E. Shockley, Rehoboth, Del.....	150 Ft.	
153	Dublin Hill-Jacob's X Road.....	17,483.00	4-16-32	Old Line Construction Co., Chestertown, Md....	3.361	16' Slag
182C	Fieldsboro-Drawyers.....	131,164.00	4-16-32	Union Paving Co., Philadelphia, Pa.....	4.318	20' Concrete
187A	Bryan's Store-Hardscrabble.....	87,000.00	4-14-32	Old Line Construction Co., Chestertown, Md....	4.8	15' Concrete
226	Fisher School-Farmington.....	59,695.00	4-14-32	Irving V. A. Huie, Inc., Saugerties, N. Y.....	4.380	9' Concrete
251	Delmar Sidewalk.....	2,773.00	4-14-32	Wm. B. Elliott, Delmar, Del.....	3000 Ft.	Sidewalk
41B	Central Ave., Laurel Widening.....	515.75	7-5-32	E. P. Downing, Salisbury, Md.....	190 Ft.	Widening
42D	Front Street, Seaford.....	7,672.00	7-12-32	Old Line Construction Co., Chestertown, Md....	3000 Ft.	Widening
253	Brandywine Sanatorium Drives.....	7,022.00	7-5-32	D. E. O'Connell & Sons, Ridley Park, Pa.....	1900 Ft.	Amiesite
254	Tub Mill-Thompsonville.....	14,813.00	7-5-32	W. W. Truitt, Lincoln City, Del.....	7.3	16' Slag
255	Tull School-Woodland.....	4,151.16	8-5-32	Field, Barker & Underwood, Philadelphia, Pa.....	2.02	16' Slag
256	Cowgill's Corner-Leipic.....	10,725.00	8-5-32	D. E. O'Connell & Sons, Wilmington, Del.....	4.11	16' Slag
257	Smith School-Staytonville.....	20,432.00	8-5-32	Old Line Construction Co., Chestertown, Md....	7.8	16' Slag
209A	Farnhurst-Rogers' Corner.....	105,478.50	8-30-32	D. E. O'Connell & Sons, Wilmington, Del.....	2.15	31' Concrete
258	Washington Street Ext., Wilmington....	37,061.75	9-3-32	George & Lynch, Dover, Del.....	2875 Ft.	20' Concrete
259	Surface Treatment.....	6,105.40	9-3-32	Lansdale Co., Hackensack, N. J.....	40	
191	County Farm-Police Station No. 4.....	41,982.50	10-1-32	Old Line Construction Co., Chestertown, Md....	3.568	9' & 16' Concrete
233	Delaware Colony Road.....	16,757.50	9-29-32	Old Line Construction Co., Chestertown, Md....	0.861	16' Concrete
249	Frankford-Dagsboro.....	55,649.70	9-30-32	Old Line Construction Co., Chestertown, Md....	2.877	16' Concrete
252	Hubbard Ave., Bowers Beach.....	6,913.50	9-23-32	George & Lynch, Dover Del.....	0.211	16' Concrete
263	Front Street, Milford.....	21,845.00	9-30-32	George & Lynch, Dover, Del.....	0.60	20' Concrete
267	State House Approaches.....	50,812.50	10-13-32	Highway Eng. & Const. Co., Selbyville, Del.....		Amiesite on Concrete

268	Wendell's Corner-Bayview School.....	5,817.00	10-15-32	W. W. Truitt, Lincoln City, Del.....	2.70	16' Slag
264	Dover-Felton.....	63,284.00	10-11-32	W. W. Truitt, Lincoln City, Del.....	10.00	4' Concrete Widening
265	Shawnee Road.....	15,729.00	10-11-32	George & Lynch, Dover, Del.....	0.429	4' Conc. Shldr. Amie. Surf.
269	Blanchard-Union School.....	15,128.50	10-31-32	Walter Roach & Sons, Georgetown, Del.....	6.75	16' Slag
A-1	Truck Storage Shed, Georgetown.....	1,800.00	11-3-32	M. J. McDermott, Georgetown, Del.....		
217	Bear-Hare's Corner.....	84,040.00	11-7-32	Vincent Schiavi, Townsend, Del.....	3.22	Grading
219A	Chestnut Street Cutoff, New Castle.....	24,600.00	11-1-32	Olivere Paving & Const. Co., Wilmington, Del.....		Grading
270	Hazlettville Rd.-Ridgely Corner.....	1,680.00	10-26-32	Field, Barker & Underwood, Upper Darby, Pa.....	1.5	Surface Treatment
228	Wesley Church-Atlanta.....	34,050.50	11-28-32	Old Line Construction Co., Chestertown, Md.....	2.70	9' Concrete
250	Independence School-Smith's Mill.....	24,735.00	11-22-32	Walter Roach & Sons, Georgetown, Del.....	1.99	9' Concrete
271	8th St. and Lincoln Ave., Delmar.....	13,214.00	11-30-32	Old Line Construction Co., Chestertown, Md.....	0.56	16' Concrete
272	Felton-Farmington.....	51,141.00	11-22-32	Walter Roach & Sons, Georgetown, Del.....	9.7	4' Conc. Widening
273	Dutch Neck Road.....	9,040.00	11-22-32	George & Lynch, Dover, Del.....	4.55	16' Slag
274	Walker School-David's Cor.....	10,920.00	11-22-32	George & Lynch, Dover, Del.....	4.55	16' Slag
262	Smyrna-Reynold's Corner Dual Road.....	160,110.60	12-10-32	George & Lynch, Dover, Del.....	3.73	20' Concrete
279	Newark-Roseville.....	6,390.50	12-8-32	A. Ventresca & Sons, Wilmington, Del.....	3100 Ft.	Sidewalk
280	Sidewalk and Wall, Naaman's Bridge...	3,775.00	12-10-32	W. L. Sowell, Inc., Wilmington, Del.....	1200 Ft.	Sidewalk
284	16' Concrete Bridge, Davis Cor.-Kenton	3,045.00	12-10-32	Spear-Jones & Co., Middletown, Del.....		Bridge
		\$1,587,407.61				

TESTING During 1932, the Testing Department in-
LABORATORY spected, tested and accepted for use all materials used in the construction of fifty-nine contracts which were undertaken by the State Highway Department during this construction season. While all materials were tested or inspected before use, the amount of materials used in the fabrication of Portland cement concrete exceeded the quantities of materials used in any other type of construction. Approximately 94,675 cubic yards of cement concrete were used in construction, with a greater quantity going into concrete pavement and the balance into concrete structures—bridges, culverts, headwalls, etc. The manufacture of this quantity of concrete required the use of approximately 142,098 barrels of Portland cement; 52,545 tons of sand; and 107,361 tons of crushed stone.

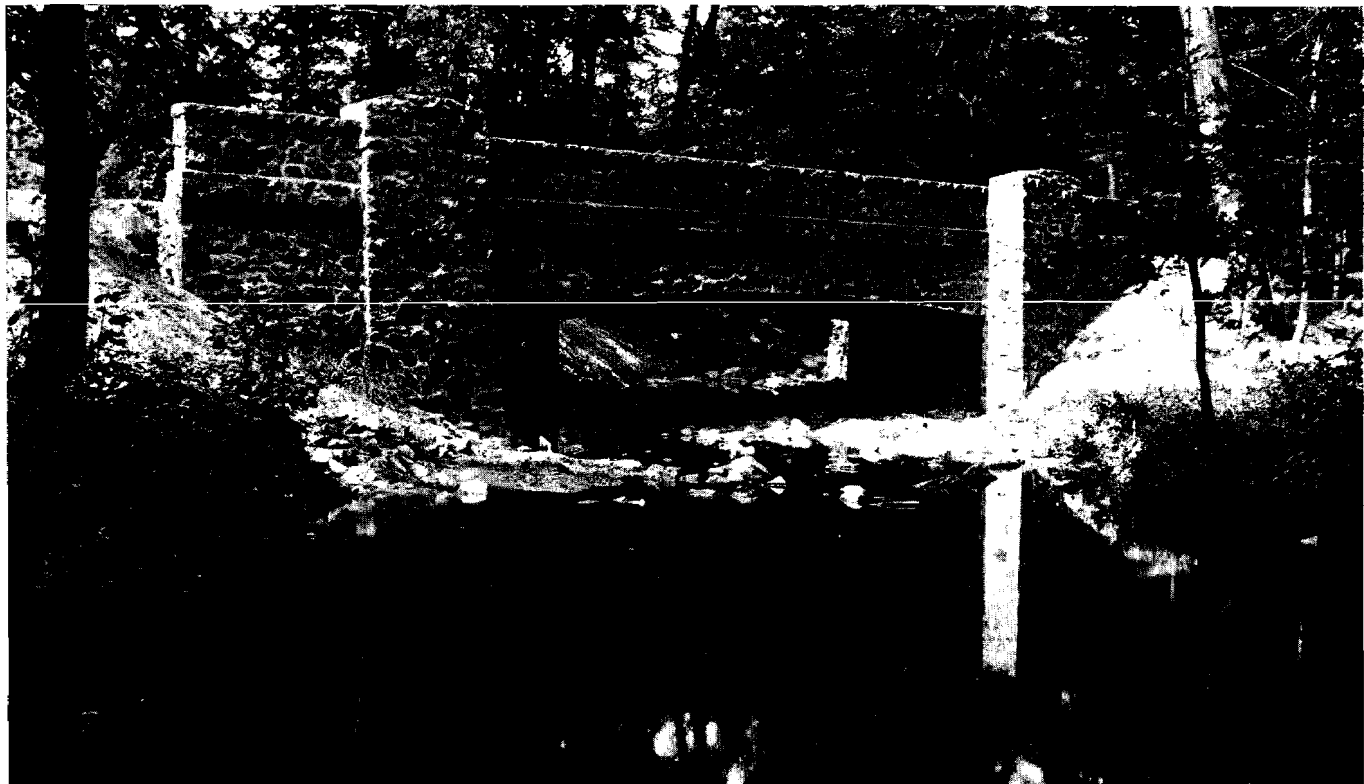
Portland cement was tested at the point of manufacture by means of samples taken by a representative of the Testing Department as the cement was placed in bins for storage. These bins were kept under seal until the tests were completed and released for shipment, when tests showed it to conform with the standard specifications. Loading from storage bins to cars was done under the supervision of an inspector and private seals placed upon each car when the loading was completed. These seals were checked and removed by the Highway Department inspector at the job after the arrival of the car. Any cement that for any reason was stored after arrival for a period of one month before use was required to be re-sampled and re-tested before final acceptance. In this manner it was assured that only acceptable cement conforming with the specifications was used in any construction work.

Sand used as fine aggregate in cement concrete was furnished for the most part from sand pits located within the State. This was in line with the policy of the Department to use local labor insofar as possible. Since there were only three established sources of sand available in the State of which the quality was known to be uniform and acceptable, a considerable amount of testing was necessary to determine the quality of the sand contained in the sources proposed for use. There were thirty-eight new locations and pits proposed on which no previous information or test data were available. Each location was investigated by the Testing Department. This

was done by means of drilling test pits dug on twenty-five or fifty-foot centers and removing suitable samples from each pit. The amount of overburden, the amount of sand available, the uniformity of the sand, as well as the quality, were determined by this means. Out of the thirty-eight proposed new locations, eight were found to be suitable. After these locations were satisfactorily prepared by the removal of over-burden they were again inspected and check samples taken for tests. After the testing and acceptance of these final samples, the quality of the sand subsequently removed was controlled by additional check samples taken at intervals as the material was furnished to the job. By a comparison of the test results on these control samples, any deviation from the requirements could be corrected before it could exceed the limitations of the specifications. Of the so-called local or small pits, all were located within the State with one exception. This one, however, was owned by a Delaware company and operated with Delaware labor.

Crushed stone for use in cement concrete was tested and inspected in the same manner that had been followed in previous years. Before shipments were made from any particular plant, a thorough inspection and complete tests were made to determine the suitability of the crushed stone to be furnished. All necessary adjustments and changes were made to reasonably assure the conformity of the material with the specifications. In some cases it was necessary to require certain changes in screen sizes and methods of screening at the quarry. After the shipment of the first pre-tested cars, a constant check on quality and grading was made by visual inspection and routine check tests on subsequent shipments.

In using crushed stone as coarse aggregate in concrete, the method mentioned in the report of the Testing Department for 1931 as having been tried has been found entirely satisfactory and adopted as a part of our standard specifications. This method consists of having the crushed stone furnished in two sizes and shipped, stored, and proportioned separately. In this manner the grading can be more closely controlled and a decided improvement made in both the strength and uniformity of the resulting concrete. Test specimens removed by the core drill from sections of concrete pavement constructed, using the old and the new methods of propor-



Rubble Masonry Bridge over Shellpot Creek, Washington Street Extension, New Castle County.

tioning coarse aggregate, showed an improvement where the new method had been followed.

In addition to the materials already mentioned, hydrated lime, calcium chloride and water which were used in the fabrication of concrete were tested by generally accepted methods. All other materials such as gravel, slag, bituminous concrete surface course, expansion joint materials, guard rail cables and offsets, concrete blocks, reinforcing steel, and miscellaneous materials were tested and inspected for use under the specifications by which their qualities are governed.

As in previous years, it has been the policy of the Testing Department to avoid as much as possible any rejections of materials after arrival on the job. By means of considerable correspondence with the producers to secure a thorough understanding of the specifications and by close supervision of plants furnishing materials, this type of rejection has been reduced practically to a minimum.

During 1932 the Testing Department has maintained a close contact with the Materials Division of the Bureau of Public Roads, the Materials Committee of the American Association of State Highway Officials, the American Concrete Institute, the Highway Advisory Board of the National Research Council, and the American Association for Testing Materials. From these sources valuable information has been obtained. The Testing Department has had from these organizations reports on a great many research and investigation projects which have been adaptable to Delaware State Highway construction.

BRIDGES AND CULVERTS Although no large structures were contracted for during the year the Bridge Division has been actively engaged in the preparation of plans and specifications for twenty-one bridges and 288 culverts which were constructed during the year; plans have also been prepared for six other bridges which are a fifty-foot rigid frame bridge for E. Loockerman Street, Dover; a bascule span with a fifty-foot clear opening at Barker's Landing with a total length of 180 feet; bridges for the dual highway at Smyrna and a 512-foot creosoted timber bridge at the Indian River Inlet, all of which it is expected will be constructed during the coming year.



Rigid Frame Bridge over Blackbird Creek, New Castle County. U. S. Route 13.

The largest structure placed under contract during the year was the seventy-five foot through plate girder bridge over the Pennsylvania Railroad at Farnhurst for the new dual highway between Wilmington and State Road. As required by law, this bridge was constructed by the Railroad Company under joint supervision. The contract was awarded to the lowest bidder at a price of \$31,250, the total cost being borne by the State. The work was practically completed at the end of the year.

After some delay in securing the approval of the plans for the Barker's Landing Bridge by the U. S. Engineers' Office, an agreement has been reached and this project will be advertised for bids early in the new year.

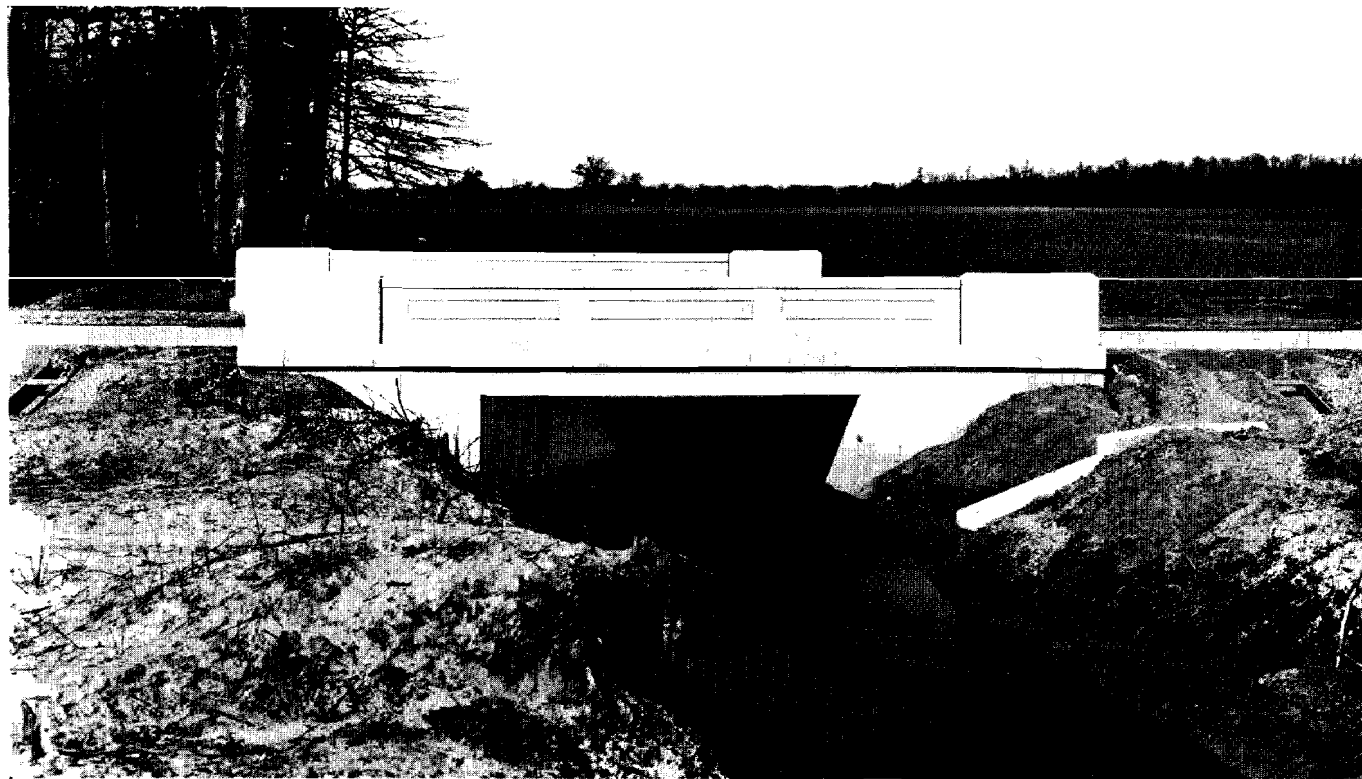
Special attention is being taken with the East Loockerman Street Bridge over the St. Jones' River near the new State Building at Dover to secure a design which will be in harmony with its surroundings and setting.

A building was designed and is now under construction at Georgetown for the storage of maintenance trucks and equipment. It is a concrete block structure twenty-four by forty-eight feet, the contract price is \$1,800.

RIGHT OF WAY In spite of the advancement of the dates of letting of contracts and difficult conditions encountered, the Right of Way Division has kept its work well in hand and no delays have occurred due to right of way difficulties.

In the year ending December 1st, 1932, the Right of Way Division secured all rights of way necessary for the construction of 74.7 miles of primary and secondary highways, 11.3 miles of dual highway and 1.2 miles of sidewalk and an additional 200 feet of right of way was also secured through the Ellendale Swamp, a distance of 2.4 miles. Of the total of 547 parcels of land required, 335 were obtained by fee simple deed, 28 by condemnation, 171 are under option and 13 were still unsettled.

In addition to the above, this Division secured title to 299 properties on previous contracts; of these, 239 were secured by deed and 60 by condemnation.



Willow Grove-Woodside State Highway, Kent County. Bridge over Cow Marsh Ditch showing Ditch Improved under Act of Legislature of 1931.

Other work of this Division consisted of the writing of 603 descriptions, obtaining 579 options, securing the execution of 574 deeds and 398 releases as well as the moving of the following buildings: 39 houses, 10 stores, 2 filling stations, 13 garages, 1 industrial plant, 1 granary, 12 barns, 5 stables, 1 school, 4 large brooder houses, a number of small buildings and the erection and re-setting of approximately 45 miles of fence.

ESTIMATES During the year approximately 900 proposals have been prepared and checked for bidders. All items upon 203 construction estimates upon 59 different contracts have been computed and checked for payment.

All items have been computed and prepared upon approximately thirty Federal Aid Vouchers and sixty Public Utility Franchises have been prepared and issued.

Weekly payrolls upon twelve Emergency Contracts have been checked and forwarded to Washington.

This section of the Department also has the additional duties of:

Tabulating and filing Construction Data.

Preparation of Special Specifications and assisting in the preparation of the General Specifications.

FEDERAL AID During the past year there has been available for Federal Aid construction in Delaware the regular Federal Aid appropriation of \$529,375 in addition to which the Emergency Relief and Construction Act of July 21, 1932, added \$600,000 to be expended previous to July 1, 1933, subject to special requirements as to rates of wages, maximum use of hand labor, the restriction of the hours of labor to not more than thirty hours per man in any one week, and the selection of unskilled labor, from lists furnished by relief agencies where such were available.

Immediate advantage was taken of this appropriation by the Department and contracts have been let which will take up the full amount of the appropriation in the allotted time.

The failure of Congress at the last session to pass the usual Federal Aid Appropriation Bill of \$125,000,000 of which Delaware's



Drawyers-St. Georges Dual State Highway. U. S. Route 13, New Castle County.
Showing Planting.

allotment is \$529,375 makes the future of Federal Aid uncertain. Unless the present session passes this Appropriation Bill, there will be no Federal Aid available for the coming year, the funds for which are usually allocated on December 1st.

In the event that this fails of passage, construction in Delaware will be curtailed during the coming year by approximately \$500,000.

MAIN- The work of maintaining approximately 925 miles
TENANCE of State Highways has engaged twenty-eight regular maintenance gangs throughout the year.

The total cost for this work for the twelve months ending November 30, 1932, was \$288,582.21 or an average cost of \$311.98 per mile which includes the cost of new trucks and equipment and all overhead expenses; as well as the cost of maintaining all bridges, culverts, traffic lights, planting of trees and shrubbery and salaries of the bridge tenders employed at the Department's seven draw-bridges.

In addition to the usual work of pouring cracks, marking center lines, dragging shoulders, mowing rights of way, collecting rubbish, clearing ditches and culverts, removing snow, erecting and maintaining traffic and warning signs, a considerable amount of sodding of slopes has been done both for protection against washing and for beautification.

All macadam type highways totalling forty-one miles were surface treated under contract and three miles of the Newark to Wilmington road west of Marshallton were likewise treated, greatly improving its condition and riding qualities.

A great deal of interest has been shown in the planting of the parkways of the dual highway with trees and shrubbery. Various individuals, community and civic clubs have donated trees and shrubbery to be planted, notable among these was the gift of your Chairman, Mr. Francis V. du Pont, who generously donated to the Department a large number of small trees and shrubs which were planted during the fall in the parkways between Blackbird and State Road and have added immeasurably to the attractiveness of this popular highway.



Brandywine Sanatorium Driveways, New Castle County.

Acknowledgment should be made of the assistance given and the plans and advice furnished by the State Forester, Mr. W. S. Taber, which have been essential to the carrying out of this work.

CONSTRUC- The Department during the past year advertised
TION twelve road lettings comprising fifty-nine contracts which were as follows:

- 35 complete roadway contracts
- 6 major grading contracts including structures
- 1 clearing and grubbing contract
- 13 sidewalk contracts
- 2 surface treatment contracts
- 1 truck shed contract
- 1 groin contract

There were 356 bidders who submitted proposals on the above contracts, an average of six per contract and the total low bid for the projects amounted to \$1,587,407.61.

The mileage of roadway contracts were divided as follows:

- 6.70 miles clearing and grubbing
- 9.01 miles grading and structures
- 2.15 miles 31 ft. concrete pavement
- 9.87 miles 20 ft. concrete pavement
- 7.16 miles 16 ft. concrete pavement
- 4.80 miles 15 ft. concrete pavement
- 17.65 miles 9 ft. concrete pavement
- 20.77 miles 4 ft. to 18 ft. concrete pavement widening
- 43.08 miles 14 ft. slag surface roadways

In addition to the above there was the State House Approach Contract comprising 18,500 square yards of bituminous concrete surface on a concrete base; the Brandywine Sanatorium driveways approximating 3400 square yards of bituminous concrete on a stone base; 36,885 lineal feet of concrete sidewalks; one state-wide oiling contract of forty miles and an oiling contract of experimental nature on one and one-half miles of the Hazletville to Dover slag road.

The construction season this year was an active one with the work evenly distributed over the entire year. During the



Washington Street, Wilmington, 36th to 43rd Street. New Castle County.

winter months and early Spring, activities were centered in grading operations mostly in the vicinity of Wilmington and this in addition to sidewalk contracts helped to relieve labor conditions.

Actual pavement operations were begun early in the Spring but unseasonable weather retarded operations and it was not until Summer that ideal weather conditions were possible to push pavement operations.

The mileage of roadways completed during the year amounts to 70.3 miles. Included in this is 17.01 miles carried over from 1931.

This total added to the mileage in the State System at the beginning of the year amounts to 951.5 miles of surfaced highways. In addition there are 46.2 miles of dirt road under State maintenance, making a total of 997.7 miles in the State System or 26.2% of the total highway mileage of the State.

In addition 11.22 miles of the dual highway, 10 miles of four-foot concrete widening, 1.07 miles of street widening were completed adjacent to existing roads. To be carried over in next year's construction will be 37.8 miles upon which grading will be carried on during the winter and paving operations as weather permits.

Important roadways built this year were the Washington Street connection, Barrett Street to 43rd Street, in the city of Wilmington. This is a relief road for North Market Street traffic with the outlet at Shellpot Park. The paving of Washington Street extension to the top of Penny Hill, now graded, will relieve traffic on the Philadelphia Pike for those coming from sections west of Wilmington. The paving of Seventh Street, New Castle, completed the last link in an improved pavement known as the "River Road" from Wilmington to St. Georges. The building of the dual road from Farnhurst to Wilmington will serve to speed up traffic and increase the safety factor over this heavily travelled stretch.

Two important secondary roads built in Kent County were the connection between Willow Grove and Woodside and the Farmington to Fisher School job.



Reynolds' Corner-Fieldsboro Dual State Highway. New Castle County.

NEW CASTLE COUNTY

Type and Location of Roads and Sidewalks Advertised and Awarded 1932

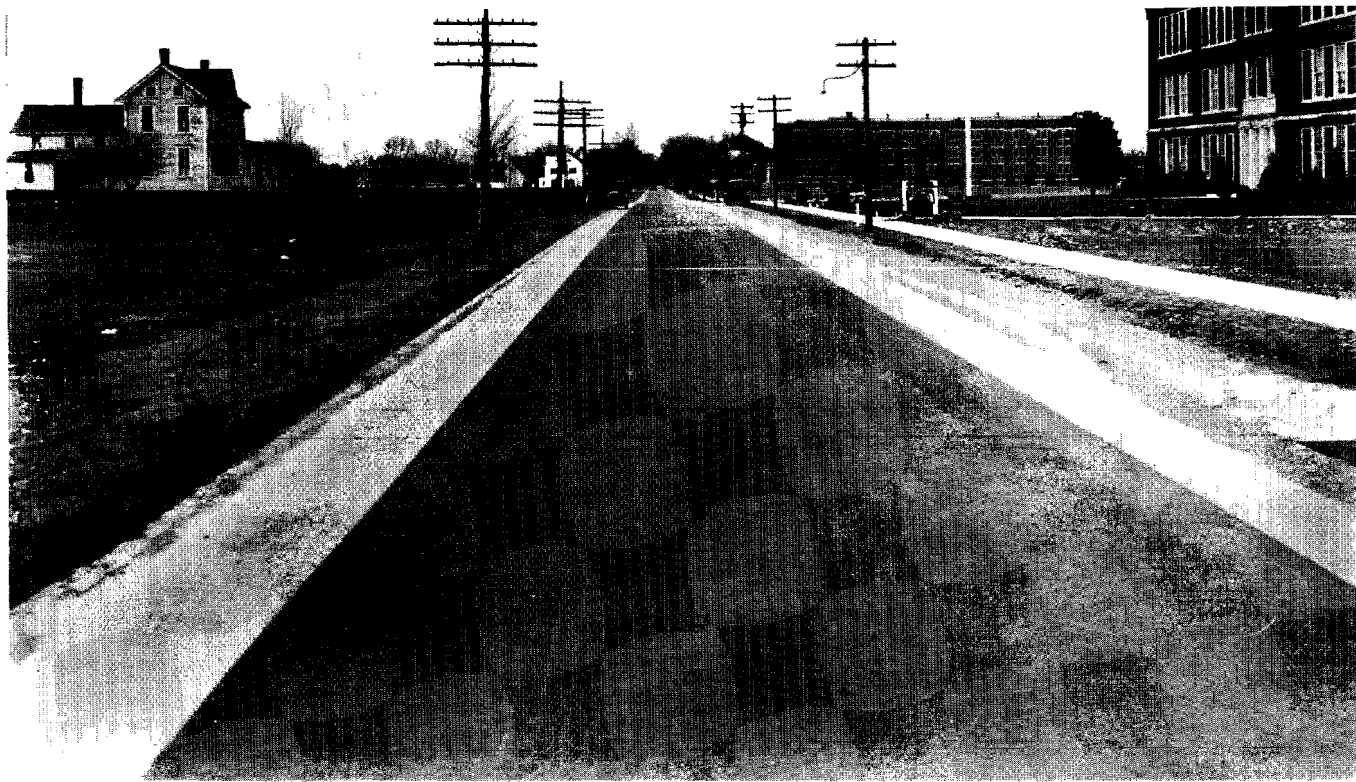
Cont. No.	Location	Grading	Conc. Sidewalks	31' Conc. dual road	20' Conc.	Amiesite Driveways	16' Slag
218	Hare's Corner-Farnhurst	2.20 mi.					
224	Washington St. Blvd. Ext.	1.48 "					
237	Augustine Bridge-Concord Pike	1.01 "					
217	Bear-Hare's Corner	3.22 "					
219A	Chestnut St. Cut-off, New Castle	.60 "					
230	Naamans Road-Hickman Road		1,250 lin. ft.				
238	St. Anne's Church-Middletown		2,700 "				
239	Kennett Pike-Greenville		6,275 "				
245	Philadelphia Pike-Marsh Road		2,910 "				
246	Christiana Sidewalk		1,700 "				
247	Centreville Sidewalk		2,000 "				
279	Newark-Roseville		3,100 "				
280	Naamaus Bridge Sidewalk		1,200 "				
253	Brandywine Sanatorium					3,400 sq. yd.	
241	7th Street, New Castle				.38 mi.		
182C	Fieldsboro-Drawyers				*4.31 "		
209A	Farnhurst-Rogers Corner			*2.15 mi.			
258	Washington St., Barrett St.-43d St.				** .85 "		
262	Smymna-Reynolds' Corner				*3.73 "		
274	Walker School-David's Corner						4.55 mi.
		8.51 mi.	21,135 lin. ft.	2.15 mi.	9.27 mi.	3,400 sq. yd.	4.55 mi.

* Indicates dual highways.

** .85 miles divided as follows: 1090 ft. 34'-6" Bit. Conc. on Conc. Base.
800 ft. 40 ft. Conc. Dual Road.
2500 ft. 20 ft. Concrete.

SUMMARY

8.51 miles Grading
21,135 lin. ft. Concrete Sidewalks
2.15 miles 31 ft. Concrete (Dual Road)
9.27 " 20 ft. "
4.55 " 16 ft. Slag Road
3,400 sq. yds. Driveways



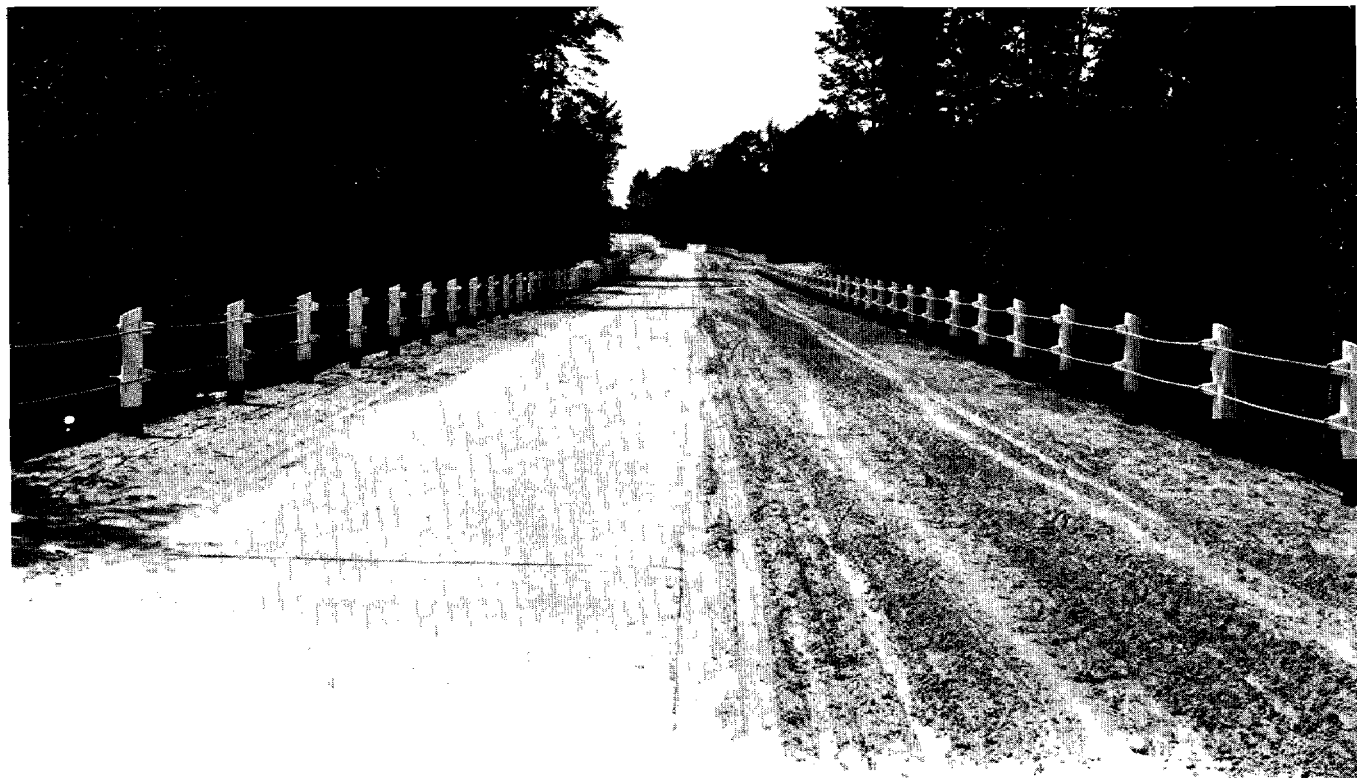
Shawnee Road, Milford. Concrete Shoulders. Amiesite Surfacing.

KENT COUNTY **Type and Location of Roads and Sidewalks Advertised and Awarded 1932**

Cont. No.	Location	Grading	Concrete Side- Walks	20 ft. Conc.	16 ft. Conc.	9 ft. Concrete	4 ft. Concrete Widening	16 ft. Slag	Driveways
227	E. Loockerman St., Dover.....	0.52 mi.							
234	Cheswold-Bishop's Corner.....		2,280 lin. ft.						
235	Dover-State College.....		5,255 "						
242	Jimtown Crossing-Clayton.....		2,490 "		0.47 mi.				
263	East Front St., Milford.....			0.60 mi.					
252	Hubbard Ave., Bowers Beach.....				0.21 mi.				
225	Willow Grove-Woodside.....					3.52 mi.			
226	Fisher School-Farmington.....					4.31 "			
264	Dover-Felton.....						10.0 mi.		
272	Felton-Farmington.....						9.7 "		
254	Tubmill-Thompsonville.....							7.3 mi.	
256	Cowgill's Corner-Leipsic.....							4.1 "	
268	Wendall's Corner-Bayview School.....							2.7 "	
273	Dutch Neck Road.....							4.5 "	
267	State House Approaches.....								*17,500 sq. yds.
* 2" Bit. Concrete on Concrete Base Course		0.52 mi.	10,025 lin. ft.	0.60 mi.	0.68 mi.	7.83 mi.	19.7 mi.	18.6 mi.	17,500 sq. yds.

SUMMARY

0.52 mile Grading
 10,025 lin. ft. Concrete Sidewalks
 0.62 mile 20 ft. Concrete
 0.68 " 16 ft. "
 7.83 " 9 ft. "
 19.7 " 4 ft. Conc. Widening
 18.6 " 16 ft. Slag
 17,500 sq. yds. Driveways & Curbs
 In addition Cont. No. 270— Surface treatment Hazlettville Road, Dover to Ridgely's Corner 1.50 mi.



Gum's Crossroads-Middleford State Highway, Sussex County. 9-foot Concrete Roadway.

SUSSEX COUNTY

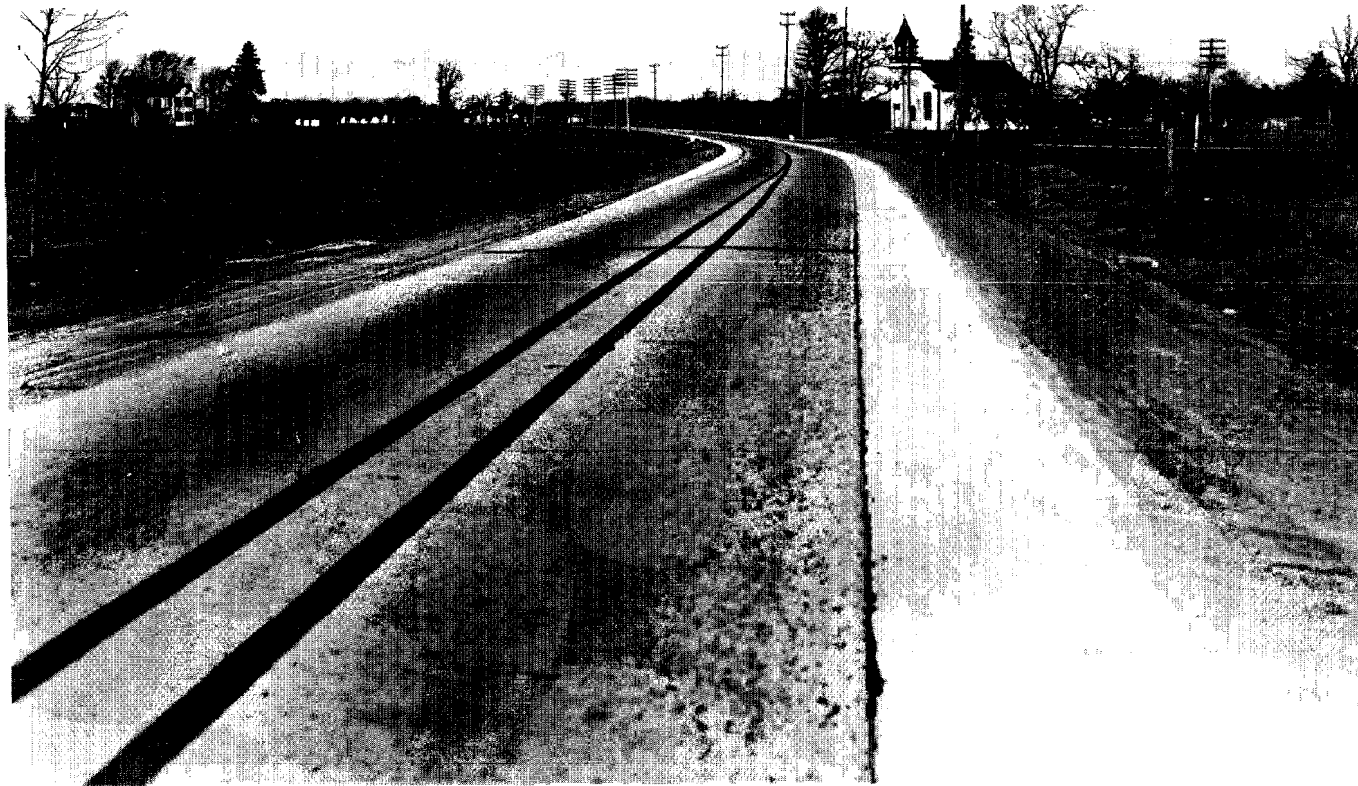
Type and Location of Roads and Sidewalks Advertised and Awarded 1932

Cont. No.	Location	Clearing and Grubbing	Widening and Surfacing	16 ft. Concrete	15 ft. Concrete	9 ft. Concrete	16 ft. Slag	20 ft. Gravel	Conc. Sidewalks
242	Sandy Forks-Bryan's Store.....	6.7 mi.							
41B	Central Ave., Laurel.....		.04 mi.						
42D	Front St., Seaford.....		.60 "						
265	Shawnee Rd., Milford.....		.43 "						
191	County Farm-Police Station No. 4.....			2.18 mi.		1.39 mi.			
233	Delaware Colony Road.....			.86 "					
249	Frankford-Dagsboro.....			2.88 "					
187A	Bryan's Store-Hardscrabble.....				4.8 mi.				
229	Gums X Rds.-Middleford.....					3.74 "			
228	Wesley Church-Atlanta.....					2.70 "			
250	Independence School-Smith's Mill.....					1.99 "			
271	8th St. & Lincoln Ave., Delmar.....			.56 mi.					
251	Delmar Sidewalks.....								3,000 lin. ft.
243	Rehoboth Sidewalks.....								2,625 "
153	Dublin Hill-Jacob's X Rds.....						3.36 mi.		
255	Tull School-Woodland.....						2.02 "		
257	Smith School-Staytonville.....						7.80 "		
267	Blanchard-Union School.....						6.75 "		
232	Stockley-Zoar Camp.....							2.72 mi.	
		6.7 mi.	1.07 mi.	6.48 mi.	4.8 mi.	9.82 mi.	19.93 mi.	2.72 mi.	5,625 lin. ft.

SUMMARY

6.7 mi.—Clearing and Grubbing
 1.07 mi.—Widening and Surfacing
 6.48 mi.—16 ft. Concrete
 4.8 mi.—15 ft. "
 9.82 mi.—9 ft. "
 19.93 mi.—16 ft. Slag
 2.72 mi.—20 ft. Gravel
 5,625 Lin. ft.—Concrete Sidewalks

In addition there were also the following contracts:
 Cont. No. X—Groin-Slaughter Beach
 Cont. No. A1—Truck Storage Shed, Georgetown.



Dover-Felton State Highway. U. S. Route 13. Kent County: Widening from 16 to 20-foot Roadway. Showing widening on both sides at curve.

In Sussex County, new highways between Bryan's Store and Hardscrabble, Dagsboro and Shaftox, and from Gum's Cross Roads to Middleford add much to the State System.

Attached is a summary of contracts by counties awarded during the year, their location and type.

WIDENING HIGHWAYS As recommended in last year's report, progress has been made in widening the 16 foot pavement on U. S. Route 13 south of Dover. Two contracts totalling twenty miles were let late in the season. The work has been completed as far as Felton and the remainder will be laid as soon as weather conditions will permit. The heavy truck traffic on this highway makes the completion of this work urgent and I would recommend that the remaining thirty miles to Delmar be placed under contract early in the year. I would also recommend the similar widening of the main highway from Dover to Rehoboth as rapidly as funds are available.

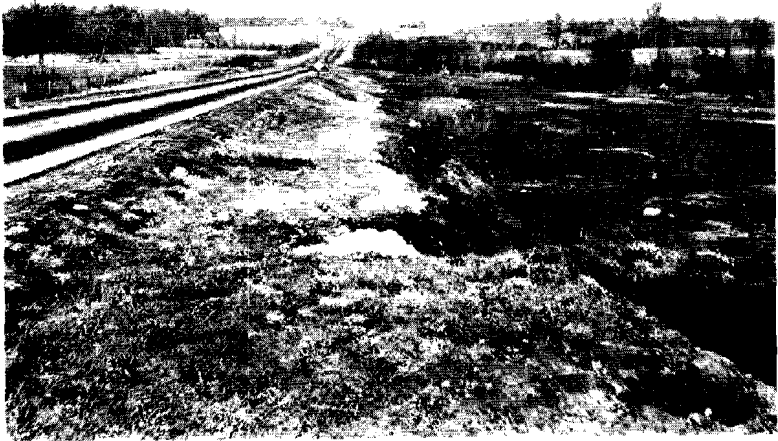
ROUTE SIGNS AND MARKERS The State Highway System has progressed to the point where, in addition to the numbering and marking of Federal Routes, it is also desirable to similarly designate the principal State Routes.

The complete signing of our highways, if conservatively carried out, would be a great service to visitors to the state as well as many of our own citizens.

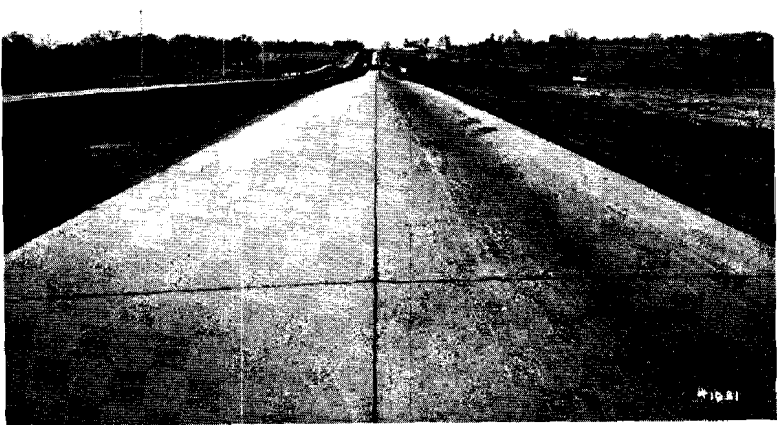
I would therefore recommend the immediate adoption of a State numbered system and the erection of suitable route and direction signs as soon as practicable.

SIDEWALKS Since 1926 recommendations have been made in the Annual Report relative to the construction of sidewalks. The past year has seen the practical accomplishment of these plans in the completion of 17.28 miles of concrete sidewalk.

These sidewalks, all constructed in the vicinity of towns, but outside their corporate limits, should prove not only a great convenience but result in the ultimate saving of the lives of many pedestrians who are compelled to use the highways.



Fieldsboro-Drawyers State Highway. U. S. Route 13, New Castle County.
Before Construction of Dual Highway.



Fieldsboro-Drawyers Dual State Highway. U. S. Route 13, New Castle
County. After Construction.

DUAL HIGHWAY Marked progress has been made during 1932 in carrying out the Department's plan for dual highway construction.

Five contracts have been let, of which 9.2 miles of completed highway extending from Drawyers Creek to Reynolds' Corner were opened for traffic early in September.

The contract for the section from Reynolds' Corner to Smyrna has been awarded and is now under construction. This link is expected to be completed by July 1st, 1933.

Grading is completed on the Wilmington-Hare's Corner section, the paving from Wilmington to Farnhurst is 95% completed and the grading work contracted for from Hare's Corner to Bear, a distance of 3.2 miles.

It is to be hoped that the paving can be constructed and opened for traffic as far south as State Road by late summer.

I would recommend the extension of the dual type highway along the Du Pont Boulevard to Dover and from State Road to the Maryland Line near Glasgow, U. S. Route 40, as funds become available for the purpose.

LOW COST ROADS During the year the Department continued its work of grading earth roads with its own forces, adding 9.2 miles to the total of 37 miles previously constructed by this method.

Forty-three miles of secondary slag road were also constructed by contract at an average cost of \$2300 per mile. This type of road serves satisfactorily secondary roads where local traffic predominates and a high type of road is not warranted.

The existing road is brought to proper shape by grading machines, the necessary drainage structures installed and the finished surface covered with a layer of slag or stone approximately two inches in thickness, which is consolidated or bound by traffic.

When properly maintained, by the addition of further material as the need develops, and by dragging, these roads have good riding qualities and are adequate for light local traffic.



Tub Mill-Thompsonville State Highway. 16-foot Secondary Slag Road.

I would recommend that during the coming year the Department place under contract approximately 200 miles of these low type traffic bound roads.

This would enable a larger mileage of roads to be improved than ever before and still allow a reasonable expansion of the widening and dual highway programs.

EMERGENCY As outlined in last year's report a large amount
EMPLOYMENT of work was undertaken late in 1931 and the
PROGRAM early months of 1932 for the purpose of relieving unemployment particularly in the vicinity of Wilmington and other towns of the state.

These projects, thirty-one in number, consisted largely of grading and sidewalk work with a maximum amount of hand labor and minimum wages specified.

Aided by unprecedented weather conditions, work proceeded throughout the entire winter and a maximum of 1200 laborers were at times employed.

It is impossible to estimate the real value of this work as a relief measure, but a survey of the payrolls shows that over 6000 individuals were thus given assistance during the winter and spring months when conditions were most acute.

The Department issued bonds to the amount of One Million Dollars during the year to carry out this program, of which \$729,-915.40 has been expended or is under contract.

The success of this relief work was made possible only by the personal interest taken in all its phases by His Excellency Governor Buck, nor could it have attained its full success without the co-operation and assistance of the Mayor's Employment and Relief Committee of Wilmington who carried on three of the largest contracts with their own forces.

This work is still in progress aided by the Federal Emergency Relief Appropriation and will continue throughout the winter and spring as far as weather conditions will permit, in cooperation with the State Temporary Emergency Relief Commission.



Smith's School-Staytonville State Highway. Sussex County. 16-foot Secondary Slag Road.

PUBLIC LANDS Bids will be opened on January 24, 1933 for the construction of a gravel highway from Dewey Beach, Rehoboth through the Public Lands to connect with the highway extending north from Bethany Beach to the Indian River Inlet. Bids will also be received for a creosoted timber bridge over the Indian River Inlet. The completion of this highway will still further open up the Public Lands in this vicinity for recreational purposes and will furnish a direct connection between Bethany Beach and adjacent territory with Rehoboth. As a protection to this road and for the preservation and building up of the Public Lands, I would recommend the construction of sand fences and dikes across the breaks in the beach front.

I would also recommend that the Department issue short-term leases under rigid restrictions for small tracts of Public Lands in order that a larger use of these lands may be made by the people of the state.

The proceeds from the above leases may be used to maintain the beach front as mentioned above.

MISCELLANEOUS APPROPRIATIONS Of the six appropriations made by the 103d General Assembly of which the State Highway Department was designated as the distributing agency, all but two were completed as shown in last year's report.

1. Indian River Inlet.

The dredging of the Indian River Inlet was completed during the year at a total cost of \$21,324.94, leaving a balance of \$18,675.06 of this appropriation unexpended.

It is impossible to predict how long the inlet will remain open unless the dredging is continued at regular intervals. Judging, however, from past experience, dredging should be repeated every second year if the inlet is to be kept clear.

2. Kent County Ditches.

The Department has continued the work of cleaning the ditches in Kent County under the appropriation made by the last General Assembly and approximately \$19,000 has been expended of the \$20,000 appropriated.



Cow Marsh Ditch at Crossing under Willow Grove-Woodside State Highway. Kent County. Before Cleaning.



Cow Marsh Ditch at same point as above view. After cleaning by Blasting with Dynamite

After careful investigation it was decided that such work as was undertaken should be of as permanent a nature as possible and be confined to the four large main ditches, viz: the Tappahanna, Cow Marsh, Shades Branch, and Marshy Hope.

TAPPAHANNA DITCH. A crawler type tractor of 35 h. p. was purchased, equipped with a double drum winch and used to excavate and to clear the channels of trees. With this outfit about four miles of Tappahanna ditch was cleared and the channel cross-section was enlarged to sufficient size to adequately drain the watershed for agricultural purposes. An additional mile of the same channel was cleaned with dynamite. Approximately 15,000 cubic yards of material was excavated on this job.

After the main channel was deepened the lateral ditches discharging into it began cutting their bottoms down to the same level. Had this action been allowed to continue some of the larger laterals would have deposited several hundred cubic yards of material in the main channel at their outlets. Such deposits would not only decrease channel capacities at the present, but they would cause velocity reductions that would cause seed, twigs and roots, carried by the current, to be deposited and start a growth of vegetation within the channel at these points. To overcome this destructive action small log dams were constructed in the lateral outlets. These prevent the laterals from cutting deeper and carrying silt into the main channel.

COW MARSH DITCH. The tractor and scoops were used to clean about two miles of this ditch. In its upper reaches the watershed is quite flat and there is little fall to the ditch. This section was repaired and a good outlet was secured for the flat farm lands near Willow Grove.

In addition to the channel cleaned with tractor and scoops about three-fourths of a mile was cleared with dynamite. About 7,000 cubic yards of material was moved on this work.

SHADES BRANCH DITCH. In this ditch horses and slip scrapers were used to clean about one-half a mile and four and one-half miles were cleaned with the tractor and scoops.



Shades Branch Ditch, Kent County. Showing Tractor Mounted Hoist with Scoops in operation.



Marshy Hope Ditch near Adamsville, Kent County. Showing Dredge in operation.

This ditch was slightly deepened throughout its entire length, sharp curves were relieved and the cross-section was made uniform. All sand bars and obstructions were removed and all trees growing in or overhanging the channel were cleared away. A total of approximately 7,000 cubic yards was excavated.

MARSHY HOPE DITCH. Marshy Hope Ditch drains about seventy-five square miles above the Kent-Sussex County line. This channel was so crooked and so far under required size that drainage conditions could be little improved by clearing out the existing channel. It had a depth of about $3\frac{1}{2}$ feet and a bottom width of 8 to 10 feet. To adequately drain the area for agricultural purposes would require a channel approximately 7 feet deep, with a bottom width of 19 feet and side slopes of $1\frac{1}{2}$ to 1.

After each heavy rainfall the entire valley has been covered with water for three to ten days; comprising an area $\frac{1}{4}$ to $\frac{1}{2}$ mile wide in many sections. Along much of the channel and over a large portion of the valley there is a growth of scrub timber. Frequent overflows, of long duration, have made this timber of little use for other than fire wood.

On the improvement a $\frac{3}{4}$ -yard dredge was started at the Kent-Sussex County Line. The channel was considerably straightened and dredged to the required size for a distance of 2.31 miles. All spoil was thrown on one side of the ditch and back at least fifteen feet from the edge of the channel. All trees growing near the channel or overhanging it were cleared away and a pass for maintenance purposes was left cleared along one side.

In this work an average of twenty to twenty-five thousand cubic yards were excavated in each mile.

Many farmers in the valley will be benefited by the improvement.

Through a cooperative agreement with the Drainage Division of the U. S. Department of Agriculture, the State Highway Department has received much valuable advice and assistance. I wish personally to acknowledge my indebtedness to Mr. W. D. Ellison,



Marshy Hope Ditch near Adamsville, Kent County. Before cleaning.



Marshy Hope Ditch at same point as above view. After Dredging.

Drainage Engineer, who was assigned to this project. He has given to every detail of the work far more of his time and knowledge than could have been expected, and the success of the work accomplished has been largely due to his efforts.

STATE There has been an increase in the number of requests
POLICE for the aid of the State Police during the year of every kind and description, including several calls from hospitals and doctors to assist in the saving of human life by rushing instruments and serum to various parts of the State.

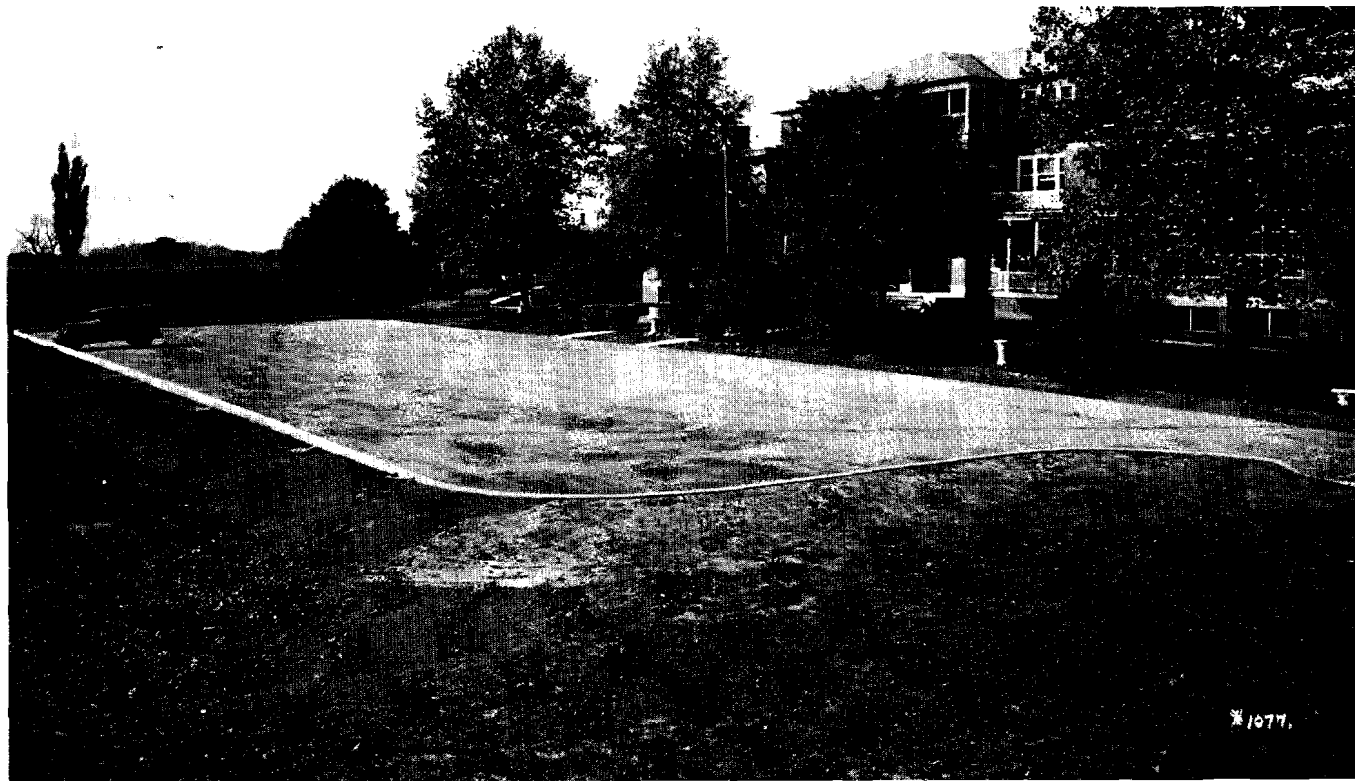
The number of trucks weighed has increased more than 25% over any former year.

Owing to economic conditions the amount received from fines has fallen off from the previous year, due in a large part to the inability of those convicted of the more serious offenses to pay their fines and the serving of jail sentences instead.

During the year of 1932 the officers of the State Police covered 922,543 miles on patrol duty, inspected 17,080 cars for defective lights and brakes, weighed 37,101 trucks, recovered 87 stolen cars, spent 6490 hours on investigations and 9089 hours on Special Duty, made 5,346 arrests for 132 different offenses, issued 36,071 reprimands and secured convictions resulting in fines totalling \$49,-325.50. The greatest number of arrests for single offense was 2057 for reckless driving; arrests for larceny totalled 167. A complete tabulation of arrests and of accidents with their causes is appended.

In the enforcement of the Aeronautical Laws of the State, forty-two airplanes were inspected and the registrations of twenty-four pilots and four mechanics were checked. There was one fatal airplane accident during the year.

For the first time since 1926 we have experienced a marked rise in the number of fatal accidents which have occurred on the highways of the State. The reasons for this increase have not, as yet, been determined, but it is the belief of those studying the records that there will be no lessening of such accidents until the average driver realizes more completely his full responsibility not only for his own safety but that of his passengers, other motorists and the pedestrian, and that it will be necessary for the enforcing



Brandywine Sanatorium Driveways, New Castle County.

officers, the Motor Vehicle Department and the Courts to hold to stricter accountability those responsible for these accidents if they are to be reduced in the future.

On December 1st the force was assigned for duty as follows:

Wilmington Headquarters: Superintendent, Captain, Lieutenant, Private, and Clerk.

Station No. 1, Penny Hill: Sergeant, Corporal and nine Privates.

Station No. 2, State Road: Sergeant, Corporal, and eleven Privates.

Station No. 3, Dover: Sergeant, Corporal and eight Privates.

Station No. 4, Georgetown: Lieutenant, Corporal, and six Privates.

Station No. 5, Bridgeville: Sergeant, Corporal, and five Privates.

There was one death and no resignations during the year.

Arrests Made for the Year 1932

Accessory	1
Aiding and abetting	11
Allowing body to extend over side	24
Allowing illegal use of tags	1
Allowing a minor to operate	2
Allowing an unlicensed person to operate	86
Allowing an unregistered car to be operated	6
Altering engine number	3
Arson	4
Assault	12
Assault and battery	172
Assault felonious	5
Assault to murder	9
Attempted conspiracy	3
Attempted kidnapping	1
 Breach of peace	 5
Breaking and entering	52
 Carrying concealed a deadly weapon	 13
Conducting lottery	4
Conspiracy	12
Cruelty to dumb animals	1
 Defective brakes	 110
Desertion (Army)	1
Desertion (Wife)	1
Disorderly conduct	84

Displaying another's license	25
Drunk	26
Drunk and disorderly	116
Exceeding legal length	1
Exceeding legal width	4
Exceeding registered weight	91
Exhibiting slot machines	1
Failing to report accident	5
Failing to render assistance	1
Failing to signal	4
Failing to stop at main highway	89
Following too close	4
Forgery	1
Fugitive from justice	10
Gambling	1
Harboring female child	2
Held as witness	38
Held for investigation	5
Hitch hiking	1
Horse drawn vehicle, no light	3
Highway robbery	1
Impersonating an officer	1
Improper lights	47
Improper tags	39
Insane	5
Interfering with officer	2
Interfering with operator	24
Jumping bail bond	2
Juvenile delinquent	26
Keeping gambling device	3
Keeping disorderly house	4
Larceny	167
Leaving accident	31
Lending license plates	4
Lending operator's license	14
Making false statement	1
Making threats	22
Malicious mischief	2
Manslaughter	43
Manufacturing liquor	1
Murder	6
No chauffeur's license	55
No clearance lights	19
No horn	15
No mercantile license	4
No mirror	74
No muffler	3
No operator's license	463

No photograph on paid driver's license	5
No registration card	1
No title	1
Non-support	16
Obstructing justice	2
Obtaining goods under false pretenses	2
Obtaining money under false pretenses	3
Operating after license had been revoked	7
Operating gambling table	1
Operating while intoxicated	204
Overloaded rear axle	146
Overloaded semi-trailer	50
Overloaded trailer	21
Overloaded truck	195
Parking on highway	17
Parking no lights	8
Passing on right	12
Passing traffic light (red)	58
Passing to left of blinker light	1
Passing trolley on left	11
Passing worthless check	26
Placing obstruction on railroad track	1
Playing crap	1
Pointing firearm	2
Possession of gambling machine	1
Possession of stolen car	5
Possession of stolen goods	2
Possession of whiskey	29
Receiving stolen goods	9
Reckless driving	2,057
Refusing to stop upon request	7
Refusing to surrender registration	3
Resisting arrest	4
Riding without owner's consent	2
Robbery	6
Running over fire hose	3
Selling on Sunday	1
Selling car without title	2
Setting fire to woods	2
Slander	1
Sodomy	3
Soliciting on highway	1
Taking car without owner's consent	13
Throwing glass on highway	5
Throwing rubbish on highway	2
Toying with female child	1
Transporting liquor	20
Trespassing	13
Unregistered car	190
Using cut-out	1
Using female child	1
Using fraud in obtaining license	2
Using mails to defraud	1

Vagrancy	8
Violating age of consent law	1
Violating Dyer Act	4
Violating learner's permit	17
Violating safety responsibility law	5
Wife beating	4
Total number of arrests	5,346
Total number reprimands	36,071
Total number trucks weighed	37,101
Total number miles patrolled	922,543
Total number cars inspected for lights and brakes	17,080
Total number hours spent on investigations	6,490
Total number hours spent on Special Duty	9,089
Total number of hours on duty	158,021
Total number stolen cars recovered	87
Total number school busses inspected	35
Total number schools visited	5
Total number school children addressed on safety	520

REPORT OF ACCIDENTS FOR YEAR 1932

Total number of accidents	922
Total number killed	72
Total number injured	821
Estimated property damage	\$246,425.00

FATALITIES

Collision with:—	Pedestrian	29
	Motor Vehicle	16
	Non-Collision	15
	Animal drawn Vehicle	4
	Fixed Object	4
	Railroad Train	3
	Bicycle	1

ACCIDENTS

Condition of Driver Contributing to Accident:—		
	View obstructed	74
	Had been drinking	68
	Asleep	45
	Blinded by headlights	16
	Confused	8
	Physical defects	8
Accidents for which the Driver was Definitely Responsible:—		
	On wrong side of road	112
	Violated right of way	79
	Skidding	73
	Slowing down or stopping	69
	Drove off roadway	63
	Exceeding speed limit	63
	Reckless driving	62
	Parking on roadway	56
	Failing to stop at main highway	41
	Improper signal	36
	Cutting in	34
	Improper turning	30

REPORT OF ACCIDENTS FOR YEAR 1932—(Continued)

Improper passing	27
Following too closely	9
Improper parking	7
Hit and run	7
Car ran away—no driver	1
Miscellaneous causes	4
Not stated	8

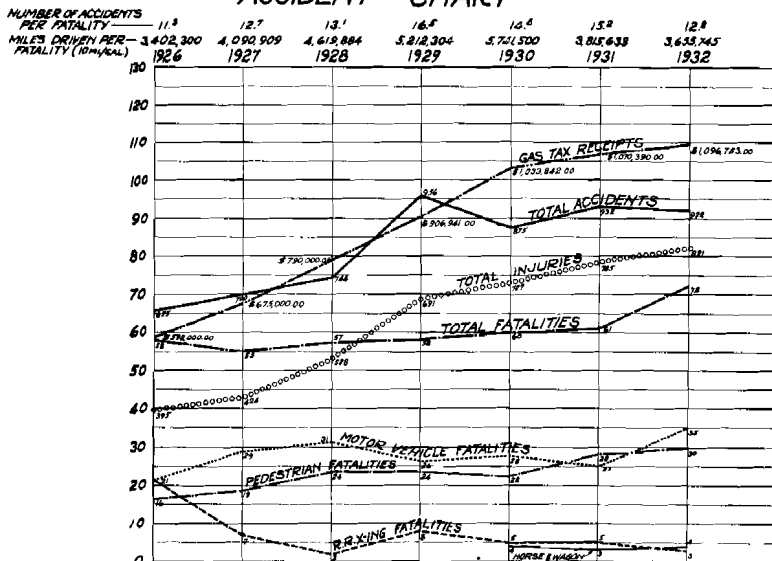
Action of Pedestrian Contributing to Accident:—

Walking on or along highway	31
In street not at intersection	21
Children playing in roadway	12
Crossing intersection	8
Getting on or off street car	3
Coming from behind car	2
Not stated	2

Condition of Pedestrian:—

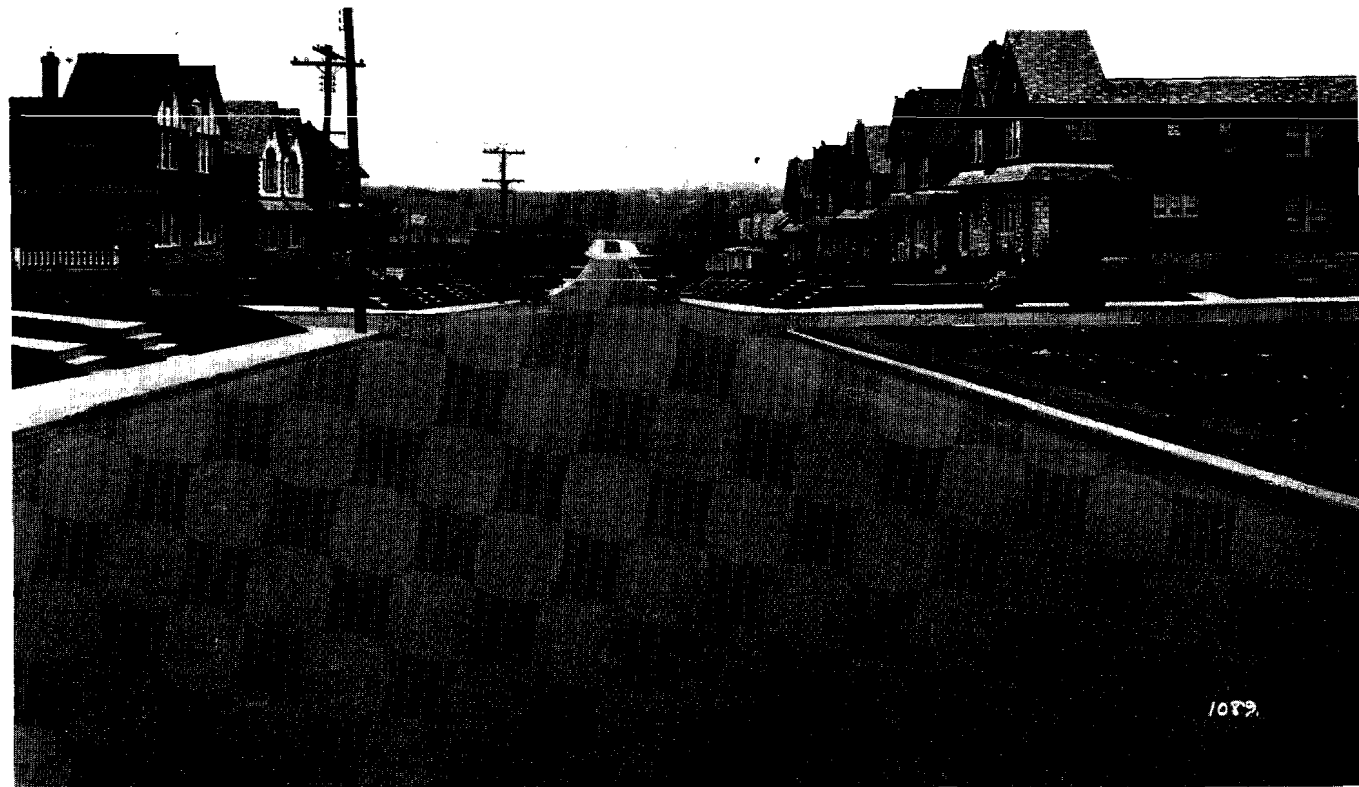
Had been drinking	11
Was confused by traffic	10
Careless	10
View obstructed	2
Had physical defect	1

STATE OF DELAWARE STATE HIGHWAY DEPARTMENT ACCIDENT CHART



Type of Vehicle Involved in Accident	Number of Accidents		
	Total	Fatal	Non-fatal
Passenger cars	1145	60	1085
Commercial cars	342	20	322
Omnibus	10	1	9
Motorcycle	12	3	9
School Bus	1	0	1
Wagons	24	2	22
Not stated	8	4	4
Totals	1542	90	1452
Highways			
Between intersections	16	1	15
Rural intersection	193	12	181
Driveway	37	1	36
Curve	71	8	63
Street intersection	52	2	50
Railroad crossing	8	2	6
Bridge	9	2	7
Straight road	531	40	491
Street car crossing	5	0	5
Totals	922	68	854
Light Conditions			
Darkness	463	38	825
Daylight	457	29	428
Not stated	2	1	1
Totals	922	68	854
Day of Occurrence			
Sunday	206	17	189
Monday	129	8	121
Tuesday	107	6	101
Wednesday	92	7	85
Thursday	114	8	106
Friday	122	8	114
Saturday	152	14	138
Totals	922	68	854
Weather Condition			
Clear	655	51	604
Cloudy	73	9	64
Fog or mist	44	2	42
Rain	122	5	117
Snow	25	0	25
Smoke or dust	2	0	2
Not stated	1	1	0
Totals	922	68	854
Type of Accident			
Collision with pedestrian	85	29	56
Collision with automobile	500	13	487
Collision with horse drawn vehicle	27	4	23
Collision with railroad train	7	3	4

	Number of Accidents		
	Total	Fatal	Non-fatal
Collision with street car	3	0	3
Collision with motorcycle	14	3	11
Collision with fixed object	114	4	110
Collision with Bicycle	4	1	3
Non-collision	139	15	124
Totals	893	72	821
Hour of Occurrence			
12 to 1 A. M.	35	2	33
1 to 2 A. M.	30	0	30
2 to 3 A. M.	23	2	21
3 to 4 A. M.	21	1	20
4 to 5 A. M.	20	2	18
5 to 6 A. M.	17	1	16
6 to 7 A. M.	23	3	20
7 to 8 A. M.	24	0	24
8 to 9 A. M.	21	0	21
9 to 10 A. M.	32	5	27
10 to 11 A. M.	27	1	26
11 to 12 A. M.	25	0	25
12 to 1 P. M.	27	0	27
1 to 2 P. M.	50	2	48
2 to 3 P. M.	40	1	39
3 to 4 P. M.	48	5	43
4 to 5 P. M.	70	5	65
5 to 6 P. M.	56	5	51
6 to 7 P. M.	68	7	61
7 to 8 P. M.	67	7	60
8 to 9 P. M.	64	5	59
9 to 10 P. M.	49	4	45
10 to 11 P. M.	46	3	43
11 to 12 P. M.	34	4	30
Not stated	5	3	2
Totals	922	68	854
Driver's Sex			
Male	1376	81	1295
Female	138	6	132
Total	1514	87	1427
Driver's Age			
Under 18 years	47	3	44
18 to 24 years	342	24	318
25 to 54 years	973	43	930
55 and over	121	5	116
Not stated	31	12	19
Driver's Experience			
Less than 3 months	22	2	20
3 to 6 months	8	1	7
6 to 12 months	20	0	20
1 year or more	1421	69	1352
Unlicensed	25	0	25
Out of state	558	31	527
Not stated	43	15	28



Washington Street, Wilmington, 36th to 43rd Street. New Castle County.

RECOMMENDED I recommend that the roads chosen for improvement during the coming year be selected from the following list, which includes those for which petitions have been received by the Department:

New Castle County

Porter-Wrangle Hill
Wright's Corner-Dexter's Corner via Green Spring
Du Pont Boulevard-David's Corner
Lancaster Pike
Kirkwood-Howell School
Creek Road from Newark to Pennsylvania State Line
Old St. Anne's Church to "Levels," thence to Townsend Road
Dexter's Corner-Coldwell
New London-Newark
Adam's Dam-Thompson's Bridge
Clayton-Green Spring
Centerville-Perry's Tavern
Brandywine Sanitarium-Lincoln Highway
Porter Station-Couch's Bridge
Porter Station-Red Lion
Thomas Corner to Price's Corner
Noxentown School to Fieldsboro
Milltown-Lincoln Highway
Approaches to proposed bridge over Canal in Delaware City
Summit Bridge to Newark
Harvey Road to Naaman Road
Driveways, University of Delaware
Sidewalk, Odessa to Drawyers Cemetery
Industrial Highway from Wilmington City Line north to Pennsylvania State Line

Kent County

Harrington-Hughes Crossroads
Maryland Line-Edwardsville-Hollandsville
Greenwood-Andrewsville Road from the Sussex County Line to the Andrews Road
Pratt's School-Pearson's Corner
Hasting's Corner-Moore's Corner
Adamsville School to Wesley Church at Maryland Line
Hazlettsville-Willow Grove
Barker's Landing-Magnolia
Houston-Staytonville
Viola-Petersburg
Todd's Church-Prospect Church
King's Highway, Dover
Canterbury to Milford-Harrington Road
Andrewsville-Vernon
Staytonville-Farmington
Prettyman's Corner-Williamsville
Vernon-Brownsville
Dover-Milford (widening)
Marvel's Cross Roads-Staytonville
Sidewalk, Harrington Cross Roads to Hollywood Cemetery
Thompsonville to Bennett Pier to Big Stone Beach
Downe's Chapel to Hazel's School
Bryant's Cross Road (West of Pratt's School) through the Hour Glass to Cedar Tree Corner

Hour Glass through Bethesda to Wright's Cross Roads
 Guy Town on the Concrete Road from Wyoming to Hazlettville and
 following the old dirt road to the concrete road leading out of Wood-
 side to near Willow Grove.
 Tub Mill Road
 Connection between Main Highway south of Farmington and Farming-
 ton-Andrewsville Road
 Sussex County
 Cedar Neck School House-Cedar Beach
 Whitesville-Hardscrabble
 Laurel-Georgetown State Highway to Concord-Hardscrabble State
 Highway
 East of Georgetown on Harbeson State Highway to West of Milton on
 Ellendale State Highway
 Lewes-Rehoboth
 Blackwater Bridge-Culver's Dairy
 Lincoln via Clendaniel's and Ponder's mill into Milton Lane
 Laurel to Broad Creek-Bethel Road
 Johnson's School-Sunnyside School
 Delmar-Ward's Store
 Sunnyside School-Bridgeville
 Vine's Creek-Y. W. C. A. Camp-Sandy Landing
 Dagsboro-Millsboro-Laurel Road near Mission
 Millsboro-Sandy Forks to Concord Road where it intersects Laurel-George-
 town Road
 Frankford to Dagsboro-Shaftox Road
 Lowe's Cross Roads through Gumboro to Selbyville
 Lincoln City-Milford-Rehoboth Road
 Marshy Hope Road-State Highway, North of Greenwood
 Roxana-Sound Church Road
 Concord-Laurel-Georgetown Road via Spicer's Mill
 Collins' Mill-Middleford
 Bryan's Store-Sandy Forks
 Baker's Corner to Greenwood-Ellendale Road
 Delmar-Kent County Line (widening)
 Prince George's Church-Roxana
 Dagsboro-Piney Neck Road
 Mt. Pleasant Church-Blackwater
 Milton to Broadkirk
 Stockley to Millsboro-Bryan's Store Road
 Coverdale Cross Roads to Bridgeville-Redden Road
 Independence School to Bethesda Church
 Lincoln to Milford-Greenwood Road
 Cokesbury to Phillips' Hill via Pusey's Cross Roads
 Jacob's Cross Roads-Atlanta
 Pilot Town Road Lewes
 Roxana-Dagsboro via Omar
 Springfield Cross Roads to Harbeson-Fairmount Road
 Seaford to Woodland
 Bridgeville west to Dublin Hill Road
 Ellendale to Slaughter Beach Road at Argo
 Milford: Second St. from Post Office to Marshall's Mill Pond
 Lincoln to Milford via New School in Lincoln
 Whitesville to Maryland-Delaware Line
 Cokesbury to Isaac's School

FINANCIAL STATEMENT The Secretary presented a detailed report of the financial transactions of the Department at the end of the fiscal year. I am attaching a summarized statement of Income and Expenditures for the period beginning January 1, 1932, and ending December 31, 1932.

INCOME

Balance December 31, 1931	\$ 585,076.59
Motor Vehicle Fees	926,685.70
Titling Fees	22,526.07
Gasoline Tax	1,096,723.48
Police Fines	49,486.35
Federal Aid	193,100.20
Miscellaneous Rentals and Reimbursements	14,389.88
Bond Sale, Proceeds	1,000,000.00
Bond Sale, Accrued Interest	5,222.22
Total Income	\$3,893,210.49

EXPENDITURES

Administration	\$ 38,833.21
Fixed Charges	
Sinking Fund on Highway Bonds	72,625.00
Int. State Highway Bonds	136,200.00
Int. New Castle County Bonds	123,505.00
Int. Kent County Bonds	87,737.50
Int. Sussex County Bonds	124,562.50
Maintenance	270,974.24
Plant and Equipment	28,348.53
State Police	146,925.26
Construction	2,252,125.22
Total Expenditures	\$3,281,836.46
Balance January 1, 1933	611,374.03

In conclusion I wish to extend my heartiest thanks to His Excellency the Governor, the Chairman, and each of the Members of the Department for the unfailing courtesy and support which they have extended to me at all times.

I wish also to acknowledge my indebtedness to each of my assistants for their loyal cooperation and help without which the work of the year could not have been accomplished.

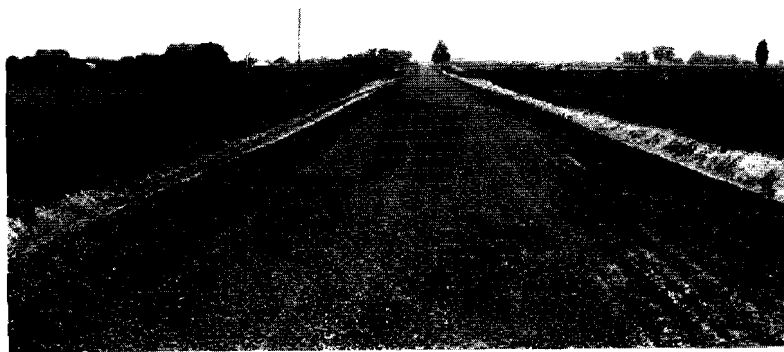
Respectfully submitted,

W. W. MACK

Chief Engineer



Dublin Hill-Jacobs Crossroads State Highway. Sussex County. Before Construction.



Dublin Hill-Jacobs Crossroads, State Highway, Sussex County. 16-foot Traffic Bound Slag Road. After Construction.